REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned "**Version With Markings To Show Changes Made**."

As a preliminary matter, Applicant submits a substitute Fig. 14 which formalizes the changes made to that figure initialed and dated by the inventor on the originally filed, regular application. Entry and notification of the same are respectfully requested.

The Examiner notes a number of objections to claims 2, 3, 19, 25, and 35 with respect to certain formalities. Although claims 1-48 have been cancelled and new claims 49-121 have been submitted, the Examiner's comments were taken into consideration in the formulation of the new set of claims.

Applicant notes with appreciation the Examiner's indication of allowable subject matter in originally filed claims 11-17, 28, and 32. For the reasons set forth above, Applicant respectfully submits that all claims are now in condition for allowance.

Claims 1-10, 18-27, 29-31, and 33-48 stand rejected under 35 USC §102(b) as being anticipated by European Patent Application 0 632 672 A2 to Baugher et al. This rejection is respectfully traversed.

Baugher describes a bandwidth reservation scheme for different traffic classes in a fixed, wireline-type communications network. Baugher concentrates, in particular, on upper layer services residing in a single fixed terminal and providing resources for that terminal. The Examiner appears to have ignored the fact that the claims of the present invention are directed to *mobile radio (wireless) communications* and not to *fixed, wireline network communications.*

In contrast to Baugher, the present invention provides dynamic quality of service reservation in the unique environment of a mobile radio communications system where plural mobile radio hosts share a same radio access network and a same pool of limited radio resources. Indeed, available radio resources on the radio interface vary over time depending on signal strengths, varying packet sizes, and many other factors. Another aspect that is unique to mobile radio communications is mobility. In other words, the very fact that

mobile radio terminals can move at will, unpredictably attaching and detaching to various points in a radio communications system, presents significant problems to packet radio communications. These and other problems are not present, and therefore are not addressed, in the fixed, wireline network of Baugher where radio interface and mobility issues are not a factor.

Claims 49-121 recite certain features of a mobile radio system that are not disclosed or otherwise suggested in Baugher. For example, claim 49 recites

> a mobile radio communications system having plural mobile radio terminals communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio terminals.

Baugher also fails to disclose that a "mobile radio terminal communicates packet data with an external network by way of a packet gateway node associated with the radio network." This kind of environment is not present in the fixed network or Baugher. Claim 49 also recites

> establishing a packet session over the radio interface for the mobile radio terminal using radio resources from the pool during which plural application flows are communicated with an external network entity.

Still further, claim 49 recites "determining whether radio resources from the pool are available to support the quality of service parameters defined for each of the plural application flows." Lacking these features, it is plain that Baugher fails to disclose or suggest claim 49 or the claims dependent upon claim 49.

Independent claim 66 recites a mobile radio communications system with plural mobile radio hosts communicating with a radio network over a radio interface using radio resources from a pool of resources that may be allocated to the plural mobile radios. Claim 66 further recites that a packet session is established

> for the mobile radio host over the radio interface using radio resources from the pool during which plural application flows are communicated between the mobile host and an external network entity.

In addition to not teaching these features, Baugher further fails to disclose "determining whether the reservation request can be met with radio resources from the pool." Nor is there a logical bearer established between "the mobile radio host and the gateway node to bear plural ones of the individual application flows having different corresponding quality of service classes." Accordingly, Baugher fails to disclose or suggest many features in claim 66 as well as features of claims that depend on claim 66.

Regarding claim 77, Baugher fails to disclose or suggest a mobile radio communications system that has plural mobile radio hosts communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio host. Nor does Baugher disclose that the mobile radio host may communicate packet data with an external network "by way of a packet gateway node and a packet serving node associated with the radio network." In regard to the latter claim feature, Baugher fails to disclose the claim recitation where the serving node associated with the radio network merges "packets from different sessions with the same quality of service destined for different mobile radio hosts within the same geographical service area."

Regarding independent claim 80, Baugher fails to disclose a mobile radio communications system. In addition, Baugher fails to disclose or suggest:

- a radio network
- plural mobile radio terminals configured to communicate with the radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio terminals
- a mobile radio terminal is configured to establish a data packet communications session over the radio interface using radio resources from the pool and to communicate to data packet streams corresponding to two data packet applications with another entity in an external network
- the claimed radio packet network

Nor are the many features of the claims which depend upon claim 80 disclosed or suggested by Baugher.

Regarding independent claim 95, Baugher fails to disclose a mobile radio terminal. Nor does Baugher disclose a mobile radio terminal that includes

> a reservation controller configured to reserve a different quality of service for different ones of plural data packet steams associated with corresponding applications operating at the mobile radio terminal and established during a data session when the mobile radio terminal is attached to the radio packet network.

Baugher fails to disclose that the reservation controller is also configured to "request from the radio network reservation of radio resources from the pool to support the different quality of services defined for the different data packet streams."

Regarding independent claim 97, Baugher fails to disclose the claimed radio packet network node for use in a mobile radio communications system that includes electronic circuitry configured to perform various tasks including:

- establish a packet session over the radio interface for the mobile radio terminal using radio resources from the pool during which plural application flows are communicated with an external network entity
- define a corresponding quality of service parameter (which may be different) for each of the plural application flows
- determine whether radio resources from the pool are available to support the quality of service parameters defined for each of the plural application flows.

Baugher also lacks features recited in the claims which depend upon claim 97.

Turning to independent claim 110, Baugher fails to disclose a radio packet network node for use in a mobile radio communications system. In addition, Baugher fails to disclose such a radio packet network node having electronic circuitry configured to perform the following tasks:

- establish a packet session over the radio interface for the mobile radio terminal using radio resources from the pool during which plural application flows are communicated with an external network entity

- determine whether a reservation request for a particular quality of service for an individual application flow associated with the packet session can be met with radio resources from the pool.

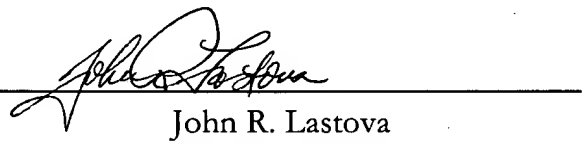
Baugher further fails to disclose any of the additional features recited in the claims that depend from claim 110.

Turning to independent claim 115, Baugher fails to disclose a radio packet network node for use in a mobile radio communications system. Moreover, Baugher fails to disclose a radio packet network node that includes electronic circuitry configured to "merge packets from different sessions with the same quality of service destined for different mobile radio hosts within the same geographical service area." The additional features recited in the claims which depend upon claim 115 are also not disclosed or suggested in Baugher.

For the reasons set forth above, Applicants respectfully submit that the present application is now in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

John R. Lastova
Reg. No. 33,149

JRL:mm
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph beginning at page 3, line 9:

--Thus, independent packet routing and transfer within the mobile network is supported by a mobile packet data support node 22 which acts as a logical interface or gateway to external packet networks. A subscriber may send and receive data in an end-to-end packet transfer mode without using [any network resources in a] circuit-switched mode network resources. Moreover, multiple point-to-point, parallel sessions are possible. For example, a mobile host like a mobile PC might run several applications at one time like a video conference, an e-mail communication, or facsimile web browsing, etc.

The paragraphs beginning at page 5, line 7 and continuing through page

-- Each BSC 34 also connects to a GPRS network 51 at a Serving GPRS Support Node (SGSN) 50 responsible for delivery of packets to the mobile stations within its service area. The gateway GPRS support node (GGSN) 54 acts as a logical interface to external data packet networks such as the IP data network 56. SGSN nodes 50 and GGSN nodes 54 are connected by an intra-PLMN IP backbone 52. Thus, between the SGSN 50 and the GGSN 54, the Internet protocol (IP) is used as the backbone to transfer data packets [PDUs]. Within the GPRS network 51, packets or protocol data units (PDUs) are encapsulated at an originating GPRS support node and decapsulated at the destination GPRS support node. This encapsulation/decapsulation at the IP level between the SGSN 50 and the GGSN 54 is called "tunneling" in GPRS. The GGSN 54 maintains routing information used to "tunnel" PDUs to the SGSN 50 currently serving the mobile station. A common GPRS Tunnel Protocol (GTP) enables different [underlying] packet data protocols to be employed even if those protocols are not supported by all of the SGSNs. All GPRS user-related data needed by the SGSN to perform the routing and data transfer [functions] functionality is accessed from the HLR 42 via the SS7 network 40. The

HLR 42 stores routing information and maps the IMSI to one or more packet data protocol (PDP) addresses as well as mapping each PDP address to one or more GGSNs. --

The paragraph beginning at page 9, line 5:

-- In the context of providing quality of service (QoS) in a mobile data communications systems, one QoS approach is to assign a specific priority to each PDP context. But this approach is unsatisfactory. As defined above, each PDP context may have plural application flows. Each application flow in a current PDP context/session likely has different per packet delay [delays] needs. For example, real time applications like telephony require a guaranteed service while image video needs a predicted delay service. More specifically, elastic applications like interactive bursts, interactive bulk transfer, and asynchronous bulk transfer require different degrees of as soon as possible (or best effort) delay service. --

The paragraph beginning at page 11, line 21 and continuing through page 12, line 5:

-- In addition to the data communications "tunnel" corresponding to the network layer bearer between the gateway node and the mobile host, a relationship is also established in the gateway node between a mobile host identifier (e.g., the mobile's IMSI), the established data communications tunnel, and the network layer address stored for the mobile host for the established session. Using this relationship, the gateway node analyzes received packets and only permits those packets having a destination or source corresponding to one of the mobile host network layer addresses [address] stored for the established session. --

IN THE CLAIMS:

-- 49. (New) In a mobile radio communications system having plural mobile radio terminals communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio terminals, where a mobile radio terminal communicates packet data with an external network by way of a packet gateway node associated with the radio network, a method comprising:

establishing a packet session over the radio interface for the mobile radio terminal using radio resources from the pool during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets;

defining a corresponding quality of service parameter for each of the plural application flows such that different quality of service parameters may be defined for different ones of the application flows; and

determining whether radio resources from the pool are available to support the quality of service parameters defined for each of the plural application flows.

50. (New) The method in claim 49, further comprising:

delivering packets corresponding to said each application flow from the external network entity to the mobile radio terminal in accordance with the defined corresponding quality of service.

51. (New) The method in claim 50, wherein the quality of service is defined for said each application flow at a network packet layer for an end-to-end communication from the mobile host and the external network entity.

52. (New) The method in claim 49, wherein different qualities of service have different allocated bandwidths, delays, or reliability.

53. (New) The method in claim 52, wherein the different quality of services include one class of service that is best effort where packets in an application flow may be dropped and another class of service that is predictive where packets in an application flow are not dropped.

54. (New) The method in claim 49, wherein a quality of service includes a delay class that specifies one or more of the following: a maximum packet transfer rate, a mean packet transfer rate, and a packet burst size of an application flow.

55. (New) The method in claim 49, further comprising:

storing subscription information for the mobile radio terminal specifying whether the mobile radio terminal may request a quality of service for specific application flows, and

checking the subscription information before defining quality of service parameters.

56. (New) The method in claim 55, further comprising:

making available for the session each quality of service class to which a user of the mobile radio terminal subscribes.

57. (New) The method in claim 49, wherein session control messages are communicated between the mobile radio terminal and the gateway node using a best efforts quality of service delay class.

58. (New) The method in claim 49, wherein establishing the packet session includes:

activating a packet session for the mobile radio terminal so that the mobile radio terminal is in communication with the gateway node;

the mobile radio terminal requesting an end-to-end configuration between the mobile radio terminal and the external network entity.

59. (New) The method in claim 58, wherein the end-to-end configuration request establishes a network packet layer bearer between the mobile radio terminal and the gateway node permitting relay of data packets between the external network entity and the mobile radio terminal even though a network packet layer address is not assigned to the mobile radio terminal.

60. (New) The method in claim 59, wherein the gateway node functions as a dynamic host configuration agent serving the mobile radio terminal as a client relaying packets between the mobile radio terminal and the external network entity.

61. (New) The method in claim 60, further comprising:

adding a remote agent identification corresponding to a mobile radio terminal identifier to messages intended for the external network entity.

62. (New) The method in claim 61, wherein during configuration, the dynamic host configuration agent captures and stores a unique network packet layer address for the mobile radio terminal for the established session for each application flow activated during the established session.

63. (New) The method in claim 62, further comprising:

establishing a data communications tunnel corresponding to the network layer bearer between the gateway node and the mobile radio terminal, and

establishing a relationship in the gateway node between a mobile radio terminal's identifier, the established tunnel, and the network packet layer address for the mobile radio terminal for the established session.

64. (New) The method in claim 63, further comprising:

analyzing packets received at the gateway node and permitting only packets having a destination or source corresponding to one of the mobile radio terminal network layer addresses stored for the established session.

65. (New) The method in claim 63, further comprising:

the gateway node routing packets according to a shortest path based on the network layer address for the mobile radio terminal for the established session.

66. (New) In a mobile radio communications system having plural mobile radio hosts communicating with a radio network over a radio interface using radio resources from a pool of resources that may be allocated to the plural mobile radio hosts where a mobile host communicates packet data with an external network by way of a packet gateway node associated with the radio network and a packet serving node associated with the radio network, a method comprising:

establishing a packet session for the mobile radio host over the radio interface using radio resources from the pool during which plural application flows are communicated between the mobile host and an external network entity, each application flow having a corresponding stream of packets;

making a reservation request for a particular quality of service for an individual application flow associated with the packet session;

determining whether the reservation request can be met with radio resources from the pool; and

if so, establishing a logical bearer between the mobile radio host and the gateway node to bear plural ones of the individual application flows having different corresponding quality of service classes.

67. (New) The method in claim 66, further comprising:

classifying and scheduling packets corresponding to said each application flow from the external network to the mobile radio host over the bearer in accordance with the defined quality of service class corresponding to the application packet stream.

68. (New) The method in claim 66, further comprising:

the serving node determining if the reservation request for the particular quality of service is permitted by a subscription corresponding to the mobile radio host.

69. (New) The method in claim 66, further comprising:

the serving node evaluating if the reservation request for the particular quality of service can be supported from the serving node to the mobile radio host based on a current traffic load of existing radio communications in the area where the mobile radio host is being served.

70. (New) The method in claim 69, wherein the evaluating step includes the serving node estimating a delay and a bandwidth requirement corresponding to the requested quality of service.

71. (New) The method in claim 70, further comprising:

the serving node providing the gateway node the estimated delay and an estimate of a bandwidth requirement corresponding to the reservation request, and

the gateway node providing the delay and bandwidth estimates to a network layer protocol.

72. (New) The method in claim 66, further comprising:

the gateway node renewing the quality of service reservation.

73. (New) The method in claim 66, further comprising:

the gateway node monitoring said each application flow to ensure that the reserved quality of service for that application flow is met.

74. (New) The method in claim 67, further comprising:

the gateway node scheduling transfer of packets corresponding to one of the application flows to ensure that the reserved quality of service for that application flow is met.

75. (New) The method in claim 67, further comprising:

the gateway node classifying packets using the reserved quality of service for the application flow to which each packet belongs.

76. (New) The method in claim 67, further comprising:

the serving node monitoring each of the application flows from the gateway node to determine whether a data transmission volume limit is exceeded, and

if so, the serving node discarding packets corresponding to an application flow having a lowest quality of service reserved.

77. (New) In a mobile radio communications system having plural mobile radio hosts communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio hosts, where the mobile radio hosts communicate packet data with an external network by way of a packet gateway node and a packet serving node associated with the radio network, a method comprising:

establishing a packet session over the radio interface for a mobile radio host using radio resources from the pool during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets;

defining a corresponding quality of service parameter for each of the plural application flows such that different quality of service parameters may be defined for different ones of the application flows; and

the serving node merging packets from different sessions with the same quality of service destined for different mobile radio hosts within a same geographical service area.

78. (New) The method in claim 77, wherein the merging is performed using first in first out scheduling except when packets cannot be delivered within a specified time.

79. (New) The method in claim 77, further comprising:

the serving node assigning packets destined for a same geographical service area but with different qualities of service to different priority queues corresponding to the different qualities of service,

wherein a larger number of packets are removed from a queue having a higher quality of service than a queue having a lower quality of service.

80. (New) A mobile radio communications system, comprising:

a radio network;

plural mobile radio terminals configured to communicate with the radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio terminals;

one mobile radio terminal configured to establish a data packet communications session over the radio interface using radio resources from the pool during which plural application flows, running two data packet applications during the session, and communicate two data packet streams corresponding to the two data packet applications with another entity in an external network, and

a radio packet network coupled between one mobile radio terminal and the external network entity for reserving a different quality of service class for each of the two data packet streams associated with the mobile radio terminal during the session;

wherein radio communication resources from the pool are reservable to support the two data packet streams with different quality of service classes.

81. (New) The mobile radio communications system in claim 80, wherein packets corresponding to the two data packet streams having different quality of service classes are transferred to and from the mobile terminal using a data packet network bearer established for the session.

82. (New) The mobile radio communications system in claim 80, wherein the quality of service class is reserved for said each of the two data packet streams at a network packet layer for an end to end communication from the mobile terminal and the external network entity.

83. (New) The mobile radio communications system in claim 80, wherein different qualities of service classes have different allocated bandwidths, delays, or reliability.

84. (New) The mobile radio communications system in claim 80, wherein one of the different quality of service classes is a best effort delivery class where packets in an application flow may be dropped and another class of service is a predictive delivery service where packets in an application flow are not dropped.

85. (New) The mobile radio communications system in claim 80, wherein each quality of service class includes a delay class that specifies one or more of the following: a maximum packet transfer rate, a mean packet transfer rate, and a packet burst size of an application flow.

86. (New) The mobile radio communications system in claim 80, further comprising:

a database node that stores subscription information for the mobile radio terminal specifying whether the mobile radio terminal may request a quality of service for specific application data packet streams,

wherein the packet node checks the subscription information in the database node before a quality of service class is reserved.

87. (New) The mobile radio communications system in claim 80, wherein the radio packet network includes:

a serving node connected between the gateway node and the mobile terminal;

a gateway node connected between the serving node and the external network entity.

88. (New) The mobile radio communications system in claim 87, wherein the gateway node relays packets between the mobile radio terminal and the external network entity.

89. (New) The mobile radio communications system in claim 87, wherein the serving node evaluates if a quality of service class reservation request can be supported from the serving node to the mobile terminal based on a current traffic load of existing radio communications in an area where the mobile radio terminal is being served.

90. (New) The mobile radio communications system in claim 87, wherein the serving node estimates a delay and a bandwidth requirement corresponding to the requested quality of service.

91. (New) The mobile radio communications system in claim 87, wherein the gateway node periodically renews the quality of service reservation.

92. (New) The mobile radio communications system in claim 87, wherein the gateway node schedules transfer of packets corresponding to one of the two data packet streams to ensure that the reserved quality of service for that is met.

93. (New) The mobile radio communications system in claim 87, wherein the gateway node classifies packets using the reserved quality of service for the application flow to which each packet belongs.

94. (New) The mobile radio communications system in claim 87, wherein the serving node includes:

a first set of queues storing packets having the same quality of service class and data packet communications session;

a second set of queues storing packet having the same quality of service class and the same mobile terminal; and

a third set of queues storing packets being served in the same geographic area and having the same quality of service class.

95. (New) In a mobile radio communications system including a radio network coupled to a radio packet network coupled to an external network where plural mobile radio terminals communicate over a radio interface with the radio network using radio resources from a pool of radio resources that may be allocated to the mobile radio terminals, a mobile radio terminal comprising a reservation controller configured to reserve a different quality of service for different ones of plural data packet streams associated with corresponding applications operating at the mobile radio terminal and established during a data session when the mobile radio terminal is attached to the radio packet network, the reservation controller also being configured to request from the radio network reservation of radio resources from the pool to support the different quality of services defined for the different data packet streams.

96. (New) The mobile radio claimed in claim 95, wherein packets in the plural application flows originate from the external network and are directed to the mobile radio terminal.

97. (New) For use in a mobile radio communications system having plural mobile radio terminals communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio terminals, where a mobile radio terminal communicates packet data with an external network by way of a packet gateway node associated with the radio network, a radio packet network node, comprising:

electronic circuitry configured to perform the following tasks:

establish a packet session over the radio interface for the mobile radio terminal using radio resources from the pool during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets;

define a corresponding quality of service parameter for each of the plural application flows such that different quality of service parameters may be defined for different ones of the application flows; and

determine whether radio resources from the pool are available to support the quality of service parameters defined for each of the plural application flows.

98. (New) The radio packet network node in claim 97, wherein the electronic circuitry is further configured to direct packets corresponding to said each application flow from the external network entity towards the mobile radio terminal in accordance with the defined corresponding quality of service.

99. (New) The radio packet network node in claim 98, wherein the quality of service is defined for said each application flow at a network packet layer for an end-to-end communication from the mobile host and the external network entity.

100. (New) The radio packet network node in claim 97, wherein different qualities of service have different allocated bandwidths, delays, or reliability.

101. (New) The radio packet network node in claim 100, wherein the different quality of services include one class of service that is best effort where packets in an application flow may be dropped and another class of service that is predictive where packets in an application flow are not dropped.

102. (New) The method in claim 97, wherein a quality of service includes a delay class that specifies one or more of the following: a maximum packet transfer rate, a mean packet transfer rate, and a packet burst size of an application flow.

103. (New) The radio packet network node in claim 97, wherein electronic circuitry is configured to establish the packet session by activating a packet session for the mobile radio terminal so that the mobile radio terminal is in communication with the radio packet network node and establishing a network packet layer bearer between the mobile radio terminal and the external network entity.

104. (New) The radio packet network node in claim 103, wherein the a network packet layer bearer permits relay of data packets between the external network entity and the mobile radio terminal.

105. (New) The radio packet network node in claim 104, wherein the radio packet network node is configured to function as a dynamic host configuration agent serving the mobile radio terminal as a client to relay packets between the mobile radio terminal and the external network entity.

106. (New) The radio packet network node in claim 105, wherein during configuration, the dynamic host configuration agent is configured to capture and store a unique network packet layer address for the mobile radio terminal for the established session for each application flow activated during the established session.

107. (New) The radio packet network node in claim 106, wherein the electronic circuitry is configured to establish a data communications tunnel corresponding to the network layer bearer between the gateway node and the mobile radio terminal, and establish a relationship between a mobile radio terminal's identifier, the established tunnel, and the network packet layer address for the mobile radio terminal for the established session.

108. (New) The radio packet network node in claim 107, wherein the electronic circuitry is configured to analyze packets received at the gateway node and permit only packets having a destination or source corresponding to one of the mobile radio terminal network layer addresses stored for the established session.

109. (New) The radio packet network node in claim 107, wherein the electronic circuitry is configured to route packets according to a shortest path based on the network layer address for the mobile radio terminal for the established session.

110. (New) For use in a mobile radio communications system having plural mobile radio terminals communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio terminals, where a mobile radio host communicates packet data with an external network by

way of a packet gateway node associated with the radio network, a radio packet network node, comprising:

electronic circuitry configured to perform the following tasks:

establish a packet session over the radio interface for the mobile radio terminal using radio resources from the pool during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets;

make a reservation request for a particular quality of service for an individual application flow associated with the packet session;

determine whether the reservation request can be met with radio resources from the pool, and if so, establish a logical bearer between the mobile radio host and the gateway node to bear plural ones of the individual application flows having different corresponding quality of service classes.

111. (New) The radio packet network node in claim 110, wherein the electronic circuitry is configured to classify and schedule packets corresponding to said each application flow from the external network to the mobile radio host over the bearer in accordance with the defined quality of service class corresponding to the application packet stream.

112. (New) The radio packet network node in claim 110, wherein the electronic circuitry is configured to monitor said each application flow to ensure that the reserved quality of service for that application flow is met.

113. (New) The radio packet network node in claim 110, wherein the electronic circuitry is configured to schedule transfer of packets corresponding to one of the application flows to ensure that the reserved quality of service for that application flow is met.

114. (New) The radio packet network node in claim 110, wherein the electronic circuitry is configured to classify packets using the reserved quality of service for the application flow to which each packet belongs.

115. (New) For use in a mobile radio communications system having plural mobile radio hosts communicating with a radio network over a radio interface using radio resources from a pool of radio resources that may be allocated to the plural mobile radio hosts, where the mobile radio hosts communicate packet data with an external network by way of a packet gateway node and a packet serving node associated with the radio network, wherein a packet session is established over the radio interface for a mobile radio host using radio resources from the pool during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets, and a corresponding quality of service parameter is defined for each of the plural application flows such that different quality of service parameters may be defined for different ones of the application flows, a radio packet network node, comprising:

electronic circuitry configured to merge packets from different sessions with the same quality of service destined for different mobile radio hosts within a same geographical service area.

116. (New) The radio packet network node in claim 115, wherein the electronic circuitry is configured to perform the merging using first in first out scheduling except when packets cannot be delivered within a specified time.

117. (New) The radio packet network node in claim 115, wherein the electronic circuitry is configured to assign packets destined for a same geographical service area but with different qualities of service to different priority queues corresponding to the different qualities of service, wherein the electronic circuitry is configured to remove a larger number of packets from a queue having a higher quality of service than a queue having a lower quality of service.

118. (New) The radio packet network node in claim 115, wherein the electronic circuitry is configured to monitor each of the application flows to determine whether a data transmission volume limit is exceeded, and if so, to discard packets corresponding to an application flow having a lowest quality of service reserved.

119. (New) The radio packet network node in claim 115, wherein the electronic circuitry is configured to determine if a reservation request for a particular quality of service is permitted by a subscription corresponding to the mobile radio host.

120. (New) The radio packet network node in claim 119, wherein the electronic circuitry is configured to evaluate if the reservation request for the particular quality of service can be supported from the radio packet network node to the mobile radio host based on a current traffic load of existing radio communications in the area where the mobile radio host is being served.

121. (New) The radio packet network node in claim 120, wherein the evaluation includes an estimation of a delay and a bandwidth requirement corresponding to the requested quality of service. --